

CLAIM AMENDMENTS

1-74 (canceled)

75. (new) A locking arrangement for locking a first part and a second part together, one of said first and second parts being turnable relative to the other of said first and second parts about a swing axis and being a door, a hatch or the like and the other of said first and second parts being a door frame or the like, the locking arrangement comprising:

a lock unit installable in the first part and including a first locking element having a first free end region which, when installed, extends generally transversely of said swing axis,

a counterpart unit installable in the second part and including a second locking element having a second free end region which, when installed, extends generally transversely of said swing axis,

an acting arm that includes a gripping formation and is pivotally mounted in the lock unit, whereby the acting arm can turn in relation to the lock unit so that the acting arm moves transversely in relation to the first free end region between a projecting position in which the gripping formation is relatively closer to said first free end region and a withdrawn position in which the gripping formation is relatively farther from said first free end region, and

a safety catch that is operable selectively either to lock the acting arm against movement from the projecting position to the withdrawn position or to permit the acting arm to move from the projecting position to the withdrawn position,

and wherein

said units cooperate in such a manner that when said units are installed and said one part is in a closed position relative to said other part, the free end regions of said locking elements overlap each other, and when the acting arm is in the projecting position and the safety catch locks the acting arm against movement from the projecting position to the withdrawn position, the second free end region is captive between the gripping formation and the first free end region for achieving locking action by the locking arrangement, whereas when the acting arm is in the projecting position and the safety catch permits the acting arm to move from the projecting position to the withdrawn position, the locking action is released.

76. (new) An arrangement according to claim 75, wherein the lock unit includes a lock body, the acting arm is pivotally mounted for movement relative to the lock body about a pivot axis, the safety catch comprises first and second arms each having a first end and a second end, the first and second arms are hinged together at the respective first ends forming a toggle joint between the arms, the second end of the first arm is hinged to the acting arm at a location spaced from said pivot axis, and the second end of the second arm is hinged to the lock body.

77. (new) An arrangement according to claim 76, including a drive mechanism coupled to at least one of the first and second arms for applying force to move the hinge between the first and second arms from a first location towards a second location, and wherein movement of the hinge between the first and second arms from the first location to the second location causes the acting arm to move from its projecting position to its withdrawn position.

78. (new) An arrangement according to claim 77, wherein the drive mechanism comprises a transferring arm coupled at a first end to the hinge between the first and second arms, and a means for moving a second end of the transferring arm along a path such as to cause the transferring arm to displace the hinge from the first location towards the second location.

79. (new) An arrangement according to claim 78, wherein the means for moving the second end of the transferring arm comprises a worm and a worm gear in meshing engagement with the worm, and rotation of the worm causes the worm gear to rotate and rotation of the worm gear in a first direction causes the second end of the transferring arm to move along said path.

80. (new) An arrangement according to claim 79, comprising a drive wheel coupled to the transferring arm, and wherein the worm gear is coupled to the drive wheel for selectively turning the drive wheel in a first direction for displacing the hinge between the first and second arms from the first location towards the second location.

81. (new) An arrangement according to claim 77, wherein the drive mechanism comprises a worm gear and a drive wheel mounted for rotation about a common axis, and a coupling means connecting the drive wheel and the worm gear for transmission of drive between the wheels.

82. (new) An arrangement according to claim 81, wherein movement of the hinge between the first and second arms from the first location to an intermediate location between the first and second location places the safety catch in a state in which the acting arm can move to its withdrawn position, and said coupling means allows movement of the drive wheel relative to the worm gear when the hinge moves from the intermediate location to the second location.

83. (new) An arrangement according to claim 81, comprising a worm in working engagement with the worm gear and an electric motor coupled drivingly to the worm.

84. (new) An arrangement according to claim 75, wherein the lock unit comprises a lock body and the acting arm has a side surface that engages with a support surface of the lock body when said units are installed and an opening force acts on said one part for supporting the acting arm relative to the lock body when the acting arm moves from the projecting position to the withdrawn position.

85. (new) An arrangement according to claim 84, wherein the support surface of the lock body and the gripping formation of the acting arm are at substantially equal distances from the axis of pivotal movement of the acting arm.

86. (new) An arrangement according to claim 75, wherein the counterpart unit includes a body member and the second locking element is attached to the body member by a hinge that allows the second locking element to turn relative to the body member.

87. (new) An arrangement according to claim 75, wherein the counterpart unit includes a body member formed with an indentation for receiving the first locking element when the units are installed and said one part is in the closed position relative to said other part.

88. (new) An arrangement according to claim 75, wherein the locking elements and the acting arm are configured to prevent the lock unit and the counterpart unit from moving away from the position in which the free end regions of the locking elements overlap each other when said units are installed and said one part is in the closed position.

89. (new) An arrangement according to claim 75, comprising a sensor for detecting the position of the safety catch.

90. (new) An arrangement according to claim 75, wherein the counterpart unit comprises a body member to which the second locking element is attached, and a spring for keeping the second locking element in a desired position relative to the body member of the counterpart unit.

91. (new) A locking arrangement for locking a first part and a second part together, one of said first and second parts being turnable relative to the other of said first and second parts about a swing axis and being a door, a hatch or the like and the other of said first and second parts being a door frame or the like, the locking arrangement comprising:

a lock unit installable in the first part and including a first locking element having a first free end region which, when installed, extends generally transversely of said swing axis,

a counterpart unit installable in the second part and including a second locking element having a second free end region which, when installed, extends generally transversely of said swing axis,

an acting arm that includes a gripping formation and is pivotally mounted in the lock unit, whereby the acting arm can turn in relation to the lock unit so that the acting arm moves transversely in relation to the first free end region between a projecting position in which the gripping formation is relatively closer to said first free end region and a withdrawn position in which the gripping formation is relatively farther from said first free end region, and

a safety catch that is operable selectively either to lock the acting arm against movement from the projecting position to the withdrawn position or to permit the acting arm to move from the

projecting position to the withdrawn position, said safety catch comprising a reel member that is movable relative to the acting arm between a locking position in which the reel member engages a rear surface of the acting arm and prevents movement of the acting arm from the projecting position to the withdrawn position and a releasing position in which the reel member permits movement of the acting arm from the projecting position to the withdrawn position,

and wherein

said units cooperate in such a manner that when said units are installed and said one part is in a closed position relative to said other part, the free end regions of said locking elements overlap each other, and when the acting arm is in the projecting position and the reel member is in the locking position, the second free end region is captive between the gripping formation and the first free end region for achieving locking action by the locking arrangement, whereas when the acting arm is in the projecting position and the reel member is in the releasing position, the locking action is released.

92. (new) An arrangement according to claim 91, wherein the safety catch comprises an arm having first and second ends and to which the reel is attached, and a drive mechanism coupled to the arm, the lock unit comprises a body, the arm is hingedly attached at its first end to the body of the lock unit, and the arm is attached at its second end to the drive mechanism, whereby the arm of the safety catch is turnable relative to the body of the lock unit by the drive mechanism.

93. (new) An arrangement according to claim 92, wherein the acting arm has a forward surface and an opposite rear surface, the gripping formation is provided at the forward surface of the acting arm, and when the reel member is in the locking position, the reel member engages the rear surface of the acting arm.

94. (new) An arrangement according to claim 93, wherein the drive mechanism comprises a transferring arm hingedly attached at one end to the arm of the safety catch and at an opposite end to a displacement mechanism for displacing said opposite end of the transferring area.

95. (new) An arrangement according to claim 94, wherein the displacement mechanism comprises a supporting arm hingedly attached at one end to said opposite end of the transferring arm and at an opposite end to the body of the lock unit, a transmission screw having a screw thread, and a substantially U-shaped transmission spring having first and second opposite ends and a curved portion therebetween, and the transmission spring is supported at one end by the screw thread of the transmission screw, at an opposite end by a medial part of the supporting arm, and at its curved portion by the body of the lock unit, whereby force rotating the screw is transmitted to the transferring arm via the supporting arm.

96. (new) An arrangement according to claim 94, wherein the displacement mechanism comprises a transmission arm having first and second opposite ends and hingedly attached at a medial region to said opposite end of the transfer arm, a supporting arm hingedly attached at one end to the transmission arm at a location spaced from the connection to the supporting arm and at an opposite end to the body of the lock unit, and a transmission screw engaging the transmission arm at said first end thereof, whereby force rotating the screw is transmitted to the transferring arm via the transmission arm.

97. (new) An arrangement according to claim 94, wherein the displacement mechanism includes a transmission screw having a screw thread, a force transmission mechanism coupling the screw thread to said opposite end of the transferring arm, and an electric motor for rotating the transmission screw.

98. (new) An arrangement according to claim 97, comprising a control unit connected to the electric motor.

99. (new) An arrangement according to claim 98, wherein the control unit controls the electric motor in response to an electric signal.

100. (new) An arrangement according to claim 95, wherein the transmission screw is connected to a mechanical power apparatus for transmitting power to the screw.

101. (new) An arrangement according to claim 91, wherein the lock unit includes a lock body, the acting arm is pivotally mounted for movement relative to the lock body about a pivot axis, the safety catch comprises first and second arms each having a first end and a second end, the first and second arms are hinged together at the respective first ends forming a toggle joint between the arms, the second end of the first arm is hinged to the acting arm at a location spaced from said pivot axis, and the second end of the second arm is hinged to the lock body.

102. (new) An arrangement according to claim 101, including a drive mechanism coupled to at least one of the first and second arms for applying force to move the hinge between the first and second arms from a first location towards a second location, and wherein movement of the hinge between the first and second arms from the first location to the second location causes the acting arm to move from its projecting position to its withdrawn position.

103. (new) An arrangement according to claim 102, wherein the drive mechanism comprises a transferring arm coupled at a first end to the hinge between the first and second arms and a means for moving a second end of the transferring arm along a path such as to cause the transferring arm to displace the hinge from the first location towards the second location.

104. (new) An arrangement according to claim 103, wherein the means for moving the second end of the transferring arm comprises a worm and a worm gear in meshing engagement with the worm, and rotation of the worm causes the worm gear to rotate and rotation of the worm gear in a first direction causes the second end of the transferring arm to move along said path.

105. (new) An arrangement according to claim 104, comprising a drive wheel coupled to the transferring arm, and wherein the worm gear is coupled to the drive wheel for selectively turning the drive wheel in a first direction for displacing the hinge between the first and second arms from the first location towards the second location.

106. (new) An arrangement according to claim 102, wherein the drive mechanism comprises a worm gear and a drive wheel mounted for rotation about a common axis, and a coupling means connecting the drive wheel and the worm gear for transmission of drive between the wheels.

107. (new) An arrangement according to claim 106, wherein movement of the hinge between the first and second arms from the first location to an intermediate location between the first and second location places the safety catch in a state in which the acting arm can move to its withdrawn position, and said coupling means allows movement of the drive wheel relative to the worm gear when the hinge moves from the intermediate location to the second location.

108. (new) An arrangement according to claim 106, comprising a worm in working engagement with the worm gear and an electric motor coupled drivingly to the worm.

109. (new) An arrangement according to claim 91, wherein the lock unit comprises a lock body and the acting arm has a side surface that engages with a support surface of the lock body when said units are installed and an opening force acts on said one part for supporting the acting arm relative to the lock body when the acting arm moves from the projecting position to the withdrawn position.

110. (new) An arrangement according to claim 109, wherein the support surface of the lock body and the gripping formation of the acting arm are at substantially equal distances from the axis of pivotal movement of the acting arm.

111. (new) An arrangement according to claim 91, wherein the counterpart unit includes a body member and the second locking element is attached to the body member by a hinge that allows the second locking element to turn relative to the body member.

112. (new) An arrangement according to claim 91, wherein the counterpart unit includes a body member formed with an indentation for receiving the first locking element when the units are installed and said one part is in the closed position relative to said other part.

113. (new) An arrangement according to claim 91, wherein the locking elements and the acting arm are configured to prevent the lock unit and the counterpart unit from moving away from the position in which the free end regions of the locking elements overlap each other when said units are installed and said one part is in the closed position.

114. (new) An arrangement according to claim 91, comprising a sensor for detecting the position of the safety catch.

115. (new) An arrangement according to claim 91, wherein the counterpart unit comprises a body member to which the second locking element is attached, and a spring for keeping the second locking element in a desired position relative to the body member of the counterpart unit.

116. (new) An arrangement according to claim 91, wherein the first free end region has a beveled inner edge and the second free end region has a beveled inner edge that engages the beveled inner edge of the first free end region when the locking arrangement is installed and said other part moves towards a closed position relative to said one part, for facilitating the free end regions of said locking elements overlapping each other.

117. (new) An arrangement according to claim 116, wherein the first free end region has a notch at an inner edge, towards the gripping formation of the acting arm, the second free end region has a projection at its inner edge and a notch at its outer edge, and the gripping formation includes a projection, whereby when the free end regions overlap and the acting arm is in the projecting position, the projection of the second free end region is received in the notch of the first free end region and the projection of the gripping formation is received in the notch of the second free end region.

118. (new) An arrangement according to claim 117, wherein the second free end region has a curved surface at its outer side and the second locking element comprises a curved portion having a proximal end at which the second locking element is attached to the body of the counterpart unit and the indentation in the second free end region is provided between said curved portion and the curved surface of the second free end region.

119. (new) An arrangement according to claim 117, wherein the projection of the gripping formation has at least one substantially flat surface for engaging the second free end region.

120. (new) A locking arrangement for locking a first part and a second part together, one of said first and second parts being turnable relative to the other of said first and second parts about a swing axis and being a door, a hatch or the like and the other of said first and second parts being a door frame or the like, the locking arrangement comprising:

a lock unit installable in the first part and including a first locking element having a first free end region which, when installed, extends generally transversely of said swing axis,

a counterpart unit installable in the second part and including a second locking element having a second free end region which, when installed, extends generally transversely of said swing axis,

an acting arm that includes a gripping formation and is pivotally mounted in the lock unit, whereby the acting arm can turn in relation to the lock unit so that the acting arm moves transversely in relation to the first free end region between a projecting position in which the gripping formation is relatively closer to said first free end region and a withdrawn position in which the gripping formation is relatively farther from said first free end region, and when the acting arm is in the projecting position the gripping formation is spaced from the first free end region to receive the second free end region between the gripping formation and the first free end region,

a holding spring for urging the acting arm from the projecting position towards the withdrawn position, and

a safety catch that is operable selectively either to lock the acting arm against movement from the projecting position to the

withdrawn position or to permit the acting arm to move from the projecting position to the withdrawn position,

and wherein

said units cooperate in such a manner that when said units are installed and said one part is in a closed position relative to said other part, the free end regions of said locking elements overlap each other, and when the acting arm is in the projecting position and the safety catch locks the acting arm against movement from the projecting position to the withdrawn position, the second free end region is captive between the gripping formation and the first free end region for achieving locking action by the locking arrangement, whereas when the acting arm is in the projecting position and the safety catch permits the acting arm to move from the projecting position to the withdrawn position, the locking action is released and a force that acts on the lock unit or the counterpart unit and tends to separate the units will pull the second locking element from between the gripping formation and the first free end region and the second locking element will simultaneously push the acting element into the withdrawn position.

121. (new) An arrangement according to claim 120, wherein the holding spring has a holding portion for engaging the acting arm to retain the acting arm in the withdrawn position, and the acting arm has a groove for receiving the holding portion of the holding spring when the arm moves to the withdrawn position, whereby the acting arm remains in the withdrawn position.

122. (new) An arrangement according to claim 121, wherein the holding spring comprises a releasing portion by which force may be applied to the holding spring to move the holding portion away from the groove to permit the acting arm to move to the projecting position.

123. (new) An arrangement according to claim 122, wherein when the arrangement is installed and the second free end region moves to the overlapping position, the second free end region engages the releasing portion of the holding spring and applies force moving the holding portion away from the groove in the acting arm.